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May 9, 2013

***VIA ELECTRONIC SUBMISSION***

Marlene Dortch
Secretary
Federal Communications Commission
445 12th St., SW
Washington, D.C. 20554

Ex Parte Statement
Re: *Connect America Fund*, WC Docket No. 10-90

Dear Ms. Dortch:

On May 8, 2013, Cathy Carpino, Mike Phau, Matt Terrell and I (of AT&T) met with Steven Rosenberg, Christopher Cook, Rodger Woock, Suzanne Yelen, Alec MacDonell, Alexander Minard, and Carol Mattey, of the Wireline Competition Bureau, regarding the above referenced proceeding. The purpose of the meeting was to discuss an approach to monitoring Connect America Fund Phase II broadband platforms. The Attachment hereto served as the basis for the discussion.

If you have any questions, please don't hesitate to contact me. Pursuant to Section 1.1206 of the Commission's Rules, this letter is being filed electronically with the Commission.

Sincerely,

James K. Smith

Attachment

cc: Steven Rosenberg
Rodger Woock
Suzanne Yelen
Alec MacDonell
Alexander Minard
Carol Mattey

# Approach to Monitoring Platforms Deployed Under CAF Phase II
# WC Docket No. 10-90

May 8, 2013

# Challenges to be Addressed

- Provide reasonable assurance that infrastructure deployed under CAF Phase II can support broadband service
  - Parameters for validation where subscribed service exceeds minimums:
    - >=4 Mbps downstream (or >=6 Mbps as applicable)
    - >=1 Mbps upstream (or >=1.5 Mbps as applicable)
    - Roundtrip Latency to support real time services
  - Task is **not** to profile individual service tier performance
- Avoid or minimize reliance upon costly new data collection mechanisms not utilized in the ongoing management of service delivery

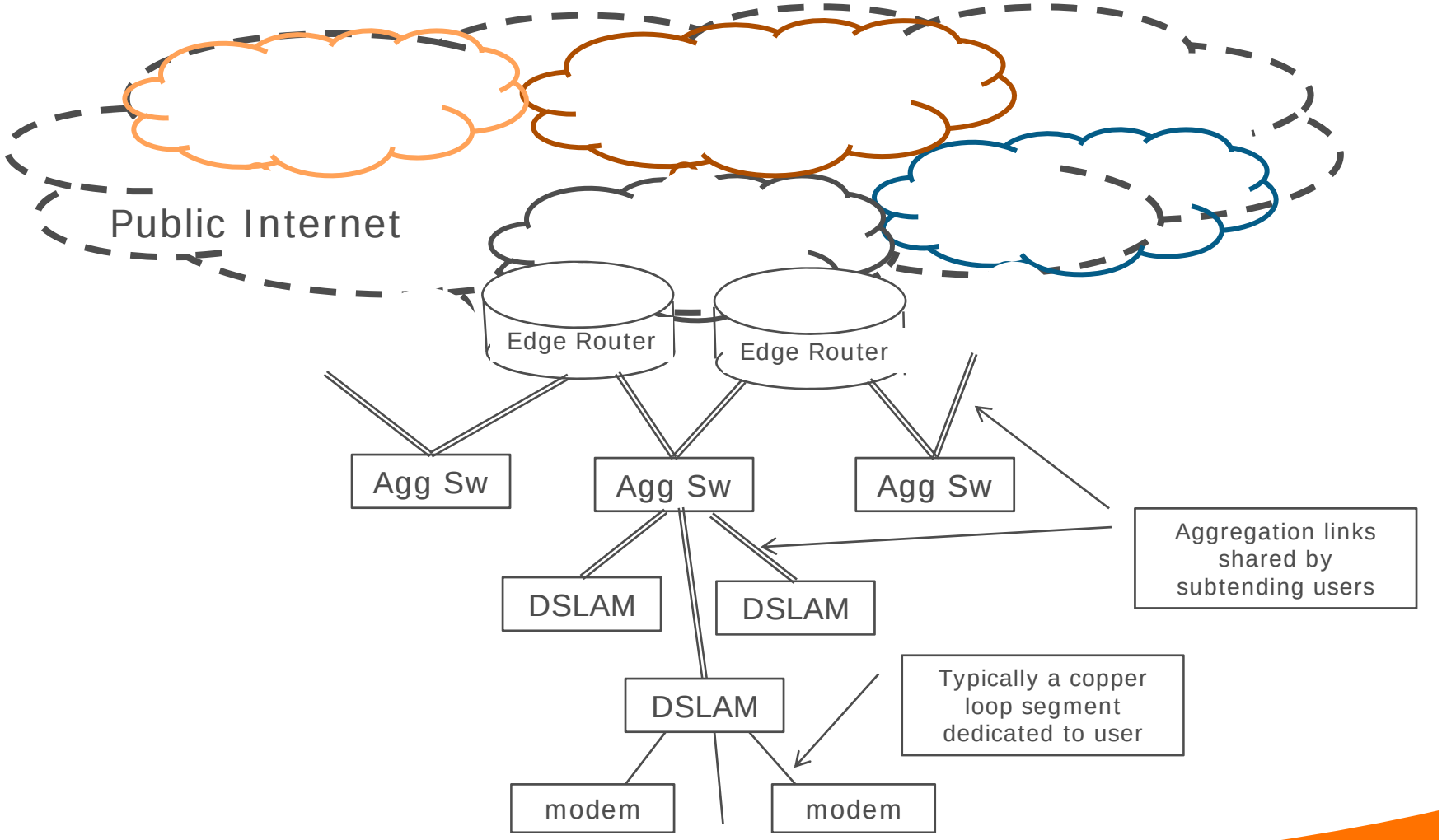
# Background

- So-called end-to-end testing is generally not feasible on large scale shared networks
  - For example, with 10,000 connections there are just short of 100 million end-to-end connections ($n^{2)}$
- Monitoring components and sections within the network is a cost-effective way to assure end-to-end performance without monitoring each end-to-end connection
  - Often problems are resolved before observable by customers
  - When problems occurs, rarely has the entire end-to-end path failed
  - Sectionalization permits rapid determination of the problem source
- If the pieces work properly, the combined pieces will work properly

# Proposal

- Utilize existing monitoring systems to confirm that the platforms deployed in CAF Phase II areas perform as expected
  - Monitor the synch rate of the dedicated access line connecting the customer premises to the aggregation network
  - Monitor the aggregation links between the point of termination of dedicated access lines to the common core network infrastructure used by all consumer broadband internet services
- Annually certify compliance based on monitoring
  - Statistics supporting certification retained for audit purposes
  - Audit data will need confidential treatment
  - Gather data for CAF Phase II areas in a state semi-annually as input to annual certification

# Simplified Internet Access Diagram



# Advantages

- Relies on existing network monitoring capabilities
- Requires minimal work to expand monitoring as CAF Phase II areas are added
- Tied to how networks are currently monitored and maintained
- Minimizes incremental cost of deploying monitoring capabilities in CAF Phase II areas
- Does not present a barrier to adopting other monitoring in the future such as those being worked on in the BBF and IETF

# Monitoring Synch

- What is the synch rate?
  - The maximum number of bits that can be transferred between the customer premises and the VRAD/DSLAM
- Why is the synch rate important?
  - Achieving synch means the loop is not limiting the provisioned service's throughput
- Remote monitoring capability exist for the synch rate
  - Can specifically focus on loops in CAF Phase II areas where subscribed service exceeds thresholds
- Ability to certify, in part, by the proportion of monitored loops that synch at or above the CAF Phase II target

# Monitoring the Aggregation Network

- The aggregation network connects the VRAD/DSLAM (at the customer side of the aggregation network) to the common core network
- Links in the aggregation network are routinely monitored to confirm sufficient capacity exists
  - If links are not congested, users should be capable of reaching subscribed service rates
  - Engineering based thresholds serve as a yardstick to initiate action
- Links connecting CAF Phase II areas to the core would be identified and monitored
- Certification driven in part by the CAF Phase II links operating in “green” status during the busy hour
- “Green” status determined by the engineered thresholds set for links which is a function of link “size”

# Summary

- Performance of the CAF Phase II platforms can be reasonably assured using existing network monitoring/diagnostic capabilities
- AT&T proposes that CAF Phase II recipients provide an annual certification based on achieving both engineered level of synch for relevant loops in CAF Phase II areas and engineered levels of utilization for operating links connecting CAF Phase II areas to the core
- AT&T will reassess methodology periodically to permit integration of or evolution to enhanced techniques for monitoring platform/service performance